Maratha VidyaPrasarakSamaj's
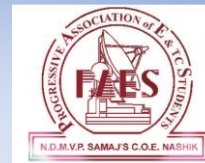# Karmaveer Adv. BaburaoGanapatraoThakare College Of Engineering Nashik-13.
(NAAC ACCREDITED INSTITUTE WITH 'A' GRADE)

KBTCOE

DEPARTMENT OF ELECTRONICS &TELECOMMUNICATION ENGG.

Departmental TeChronicle

Month: - April2020

Vol. - 02, Issue – 01

Department Vision:-
To recognize as excellent department offering competent technical education to create competent electronics & telecommunication engineers for benefits of common masses.

Department Mission:-
Committed to serve the needs of society through innovative teaching learning process, promoting industry- institute interaction to provide competent and cultured electronics and telecommunication engineers.

Greeting,
Department of Electronics and Telecommunication is unveiling technical newsletter "TeChronicle" Vol. 02, Issue - 01" on 4th April on occasion of birth anniversary of late Dr. V. N . Pawar, recipient of the prestigious Dr. B. C. Roy award, Ex. Sarchitnis of Maratha VidyaPrasarakSamaj (MVP, Nashik).

Here the TeChronicle would like to let you know the success story of a very hard working industrialist.

Interaction with Mr. JitendraAgrawal

[Editorial Team, TeChronicle]
Motwane Manufacturing Company Pvt. Ltd.is R&D and IoT Company, with a strong presence in the electrical test and measurement field. They are leaders in the design and manufacture of high performance, high precision electrical test and measurement equipment's. Their completely digitized testing software solutions are transforming the measurement industry by enabling advanced real-time digital testing and measurement. Mr. JitendraAgrawal is a Chartered Accountant with industry experience in agriculture, electronics and automotive sectors. He completed his C.A. in Accounting and Finance from The Institute of Chartered Accountants of India (2000-2003). After that he worked as Dy. CFO (DGM - Finance and Accounts) in Mahindra Forgings Limited (Mahindra CIE Automotive Limited)(2007-2010). Then he worked as Finance Controller in Krishidhan Seeds Pvt. Ltd. (2010-2012). In 2012, he joined Motwane Manufacturing Company Pvt. Ltd as a Managing Director.

Few of the questions while conversing with Agrawalsir are:

Q: **What do you think will be future in Electronics?**
A: The future is digital, the information, bills, entertainment and even 1/3rd economy of the country is digital. There will be complete digital atomization, IoT (internet of things) and AI (artificial intelligence) ruling in future. For that you need to have basic knowledge of hardware, embedded system, communication layers, machine learning, and basic software languages when you enter the market as an Engineer, because Electronic Engineer rules hardware as well as software.

Q: **What qualities do you seek, while recruiting students?**
A: The student must have basic, practical knowledge and logical understanding. One must show willingness to do research, and should be able to apply it practically by being creative and channelizing their talents.

Q: **What advice would you like to give these young Engineers?**
A: Whatever situation it may be, do not blame it. If you are passionate enough, things will go right. For that you need to be unique by challenging the norms and thinking out of the box.

New Realities:1.Virtual Reality (VR)

Dr. Vijay M. Birari, [HOD, E & TC Engineering]

Virtual reality is an artificial digital environment that completely replaces the real world. With VR, users experience artificial sounds and sights and feel as if they're in a digital world. Imagine opening your eyes and seeing a computer-generated world all-around you; you can move in this environment and even interact with it. That's what virtual reality is like. Special VR headsets are used to immerse users in virtual reality. There are two main types of VR headsets:

PC-connected headsets

These VR headsets are connected to a computer or a gaming console that generates high-quality virtual experiences to generate realistic and persuasive digital worlds.VR headsets can be used along with special controllers. The most popular PC-connected VR headsets are HTC Vive, Samsung Odyssey+, PlayStation VR and Oculus Quest.

Standalone headsets

Most standalone VR headsets use a smart phone screen to provide the virtual reality experience. As users can simply insert their smart phone into the headset to enjoy VR.Samsung Gear VR, Google Daydream and Google Cardboard work exactly this way.Immersive Videos as a Form of VRAvid internet users know that YouTube supports 360-degree videos. Today, these videos are becoming increasingly widespread. Unlike conventional videos with a limited field of view, 360-degree videos are Omni-directional and, therefore, immersive.Though this classification is disputed, immersive videos (as well as photos) are considered by many as a form of virtual reality. Users need to wear headsets to experience them to their fullest. For example, in a 360-degree video a user can move their head and look around the live scene.

Real-Life Applications of Virtual Reality

- **Gaming**

The gaming industry has already embraced this technology. Gaming, however, isn't the only field where virtual reality technology can be used.

- **Education**

VR learning content can revolutionize education, making learning immersive and more engaging. And apart from schools and universities, virtual experiences can also help businesses train their staff. Universe is already offering VR educational content for businesses and institutions.

- **Real Estate**

Photos have been used by real estate agents to showcase properties for decades. But now, agents can use virtual reality for this purpose. Unlike photos, VR is immersive, so potential buyers can take three-dimensional walkthroughs and better understand what each property has to offer before visiting in person. Matter port is already using 360-degree video showcases to help agents better interact with their clients. Moreover, VR can help architects show their projects to clients as virtual reality enables clients to see what their future property will look like.

- **Healthcare**

Being immersive, virtual reality can give an in-depth look into human anatomy, helping doctors better understand their patients' needs. VR technology also comes in handy for surgical training. A platform built by Medical Realities uses 360-degree videos and virtual anatomy to train future surgeons.

- **Marketing**

Businesses can reach out to their audiences by launching immersive and engaging marketing campaigns. This is particularly important in the age of online shopping, as VR experiences help people get a feel for products without leaving their homes. For example, IKEA created a VR application featuring a kitchen. Wearing a VR headset and using a controller, people can explore this virtual kitchen and even interact with it.

- **Travel**

Virtual tours can help travel businesses promote destinations and attract tourists. Google Street View is the best example of how VR technology can be used in the travel industry. Though it's possible to view panoramic images right on a computer, users can also enable Google Cardboard mode for a virtual reality experience.

References:

1. Information collected from Internet

Are humans a threat or asset in cyber security?

Ms. RutujaRajole[T.E E&TC]

Cyber security might not seem like emerging technology, but it is evolving just as other technologies. Cyber security is the practice of protecting systems, networks, and programs from digital attacks. A successful cyber security approach has multiple layers of protection spread acrossthe Computers, networks, programs, or data that one intends to keep safe. Everyone relies on critical infrastructure like power plants, hospitals, and financial service companies. Securing these and other Organizations is essential to keep our society functioning. Cyber security is an umbrella term which encompasses different types of Security.

Application security: This constitutes the measures and countermeasures meant to tackle threatsand vulnerabilities that arise in the development stage of an application such as design application,development, deployment, maintenance, upgrade, etc.

Information security: This refers to the protection of information and data from theft, unauthorized access, breaches, etc. in order to uphold user privacy and prevent identity theft.

Disaster recovery: This involves planning and strategizing to enable organizations to recover fromcyber security/ IT disasters.

Network security: This constitutes monitoring and preventing authorized access and exploitation ofinternal networks of an organization. By leveraging both hardware and software technologies, Network security ensures that internal networks are safe, reliable and usable.

Website security: This is used to prevent and protect websites from cyber security risks on the internet. Holistic website security programs will cover the website's database, applications, source codes and files.

Endpoint security: This enables organizations to protect their servers, workstations and mobiledevices from remote and local cyber-attacks.

Cyber security threats:

Ransomware: It is a type of malicious software. It is designed to extort money by blocking access tofiles or the computer system until the ransom is paid.

Phishing: It is the practice of sending fraudulent emails that resemble emails from reputable source. The aim is to steal sensitive data like credit card numbers and login information.

Malware: It is the type of software designed to get unauthorized access or to cause damage to acomputer.

Social engineering: It is the tactics that use to trick you to revealing sensitive information. They cangain access to your confidential data.

Example:

Cosmos Bank Cyber-Attack in Pune

A recent cyber-attack in India 2018 was deployed on Cosmos Bank in Pune. This daring attackshook the whole banking sector of India when hackers siphoned off Rs.94.42 crore from CosmosCooperative Bank Ltd. in Pune. Hackers hacked into the bank's ATM server and took details ofmany visas and rupee debit cardholders. Money was wiped off while hacker gangs from around28 countries immediately withdrew the amount as soon as they were informed.

References:
https://www.cisco.com/c/en_in/products/security/what-is-cybersecurity.html
https://www.youthkiawaaz.com/2018/07/different-types-of-cyber-security/

Hyper Automation- Fast complete process automation
Ms. RutujaKakulte[T.E E&TC]

What is Hyper-Automation? A complete guide
In simple terms, hyper-automation refers to the mixture of automation technologies that exist to augment and expand the human capabilities. Then, together with humans, hyper-automation can create a workplace that is always informed, fragile and able to use data and insights for quick and accurate decision-making.

Let's define those that are important for hyper-automation to take place, namely:
- Robotic Process Automation
- Machine Learning

It's more than automating tasks: Hyper-automation does not just refer to implementing tools to manage tasks. It requires collaboration between humans, as well. For example, let's imagine the case of social media and customer retention. A business can rely on tools that leverage RPA and machine learning to produce reports and pull data from social platforms to attain customer sentiment. As such, reports will be generated, and there will be information readily available for the marketing team. But, it will then require that the marketing team uses these insights to consider what type of campaigns, promotions and incentives to incorporate into a business plan to hold onto satisfied customers and attempt to salvage those who feel dissatisfied.

Hyper-automation provides your business and its leaders with:
- Automated processes
- Advanced analytics
- Increased employee satisfaction and motivation
- An educated workforce
- Instant and accurate insights
- Greater compliance and reduced risk
- Greater productivity
- Increased team collaboration

What Hyper-automation means for Finance Teams?

Hyper-automation makes sure financial teams have their data up-to-date and centralized instantly. With RPA, low-level tasks are managed automatically, and financial organizations can spend more time offering strategic decision-making advice with insights gleaned from automated reports. It improves accuracy and enables CFOs to have live-data reporting, to identify risks and opportunities immediately and enable fast decisions using the most current data. So, given the vast amounts of data that finance teams work with daily, security andaccessibility are vital components of daily operations.

Hyper automation relies on secure tools that inherently provide audit trails and access to only those who should have it.

References:

https://towardsdatascience.com/top-10-technology-trends-for-2020-4a179fdd53b1

https://www.solvexia.com/blog/what-is-hyperautomation-a-complete-guide

https://blog.technologent.com/hyper-automation-top-10-technology-trend-for-2020

Transparent Displays

Mr. ShivamJunghare[S.E E&TC]

Whenever you hear the word "transparent screen", you always recognize IRONMAN and TOM CRUISE. You have seen them in many Hollywoodmovies doing some cool stuff on these screens and always thought of doing so. But ever wonder how these cool stuffs work?

The see-through screens

There is no rocket science behind these screens to be transparent. It's rather a commonly used technology, used efficiently. This is nothing but the LCD's and LED's. The LCD Panel Is by nature "See Through" or you can say "Transparent". Though LCD's have relatively Low Transmission Efficiency, so that they tend to appear somewhat dark against natural light. LCD Displays do not produce their own light but only modulate ambient light, unlike the LED Displays. LCD's intended specifically for transparent (see through) displays are usually designed to have an improved transmissionefficiency. LCD uses natural lighting like the sun instead of electrical

backlighting. The lack of a backlight allows the screens to be much thinner as well as see-through. See-through LCD screens are a cheaper alternative to OLED's, however, their use is limitedbecause of the natural lightrestriction

Working of OLED's
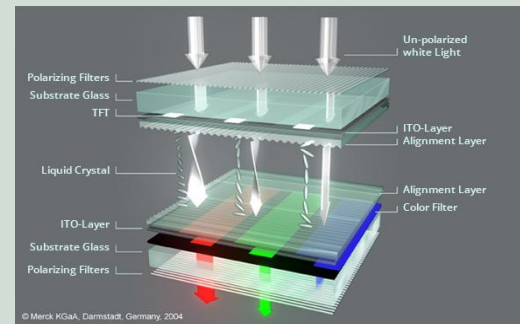
Basically, OLEDs are composed of a couple of layers of plastic -- the organic, or Carbon-based, material in the name -- sandwiched between two layers of glass. That's why you can see right through an OLED screen. The design also includes tiny clear cathodes to inject electrons into the screen, and anodes that enable the electrons to flow out of the device. When you turn on the TV, it sends electricity through the plastic layers, and it reacts with chemicals in the plastic to create the picture on the screen. One of the advantages an OLED has over a liquid crystal display (LCD), another common type of screen, is that when the electricity goes through the plastic, it actually emits light on its own. An LCD screen, in contrast, only creates the shapes and colour. It has to be backlit with another light source. That means that an OLED doesn't require as much electricity as an LCD, and unlike that type of screen, an OLED can produce a true black, by not giving off any light in a certain area. A plasma screen can do some of the same things, but because it has gas inside, it needs to have thicker glass and is bulkier than an OLED, and it isn't as efficient.

References:https://electronics.howstuffworks.com/gadgets/high-tech-gadgets/transparent-tv1.html

https://www.quora.com